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# HELPING CITIES DRIVE TRANSFORMATION: the 100 Resilient Cities Initiative

**Interviews with Michael Berkowitz,**  
President of 100 Resilient Cities

**and Dr. Arnoldo Matus Kramer,**  
Mexico City's Chief Resilience Officer



Bangkok

Michael Berkowitz has served since 2013 as President of 100 Resilient Cities - Pioneered by The Rockefeller Foundation. Previously, he was the global head of Operational Risk Management (ORM) at Deutsche Bank. Before 2010, he was the head of CSBC in APAC, and editor of Emergency Preparedness News, a Washington, DC-based newsletter for emergency management professionals.

Arnoldo Matus Kramer has been Chief Resilience Officer of Mexico City since 2014. He has more than 15 years of experience in climate change and environmental policies. In 2012, he co-founded Ithaca Environmental, a consulting firm providing counsel in climate change, sustainability, environmental finance and clean technology topics.

## KEYWORDS

- ROCKEFELLER FOUNDATION
- SHOCKS AND STRESSES
- CHIEF RESILIENCE OFFICER

Pioneered by the Rockefeller Foundation, 100 Resilient Cities (100RC) was founded in 2013 as a separate NGO to help cities face three major threats and challenges: growing urbanization, globalization, and climate change. Initially, a commitment of \$100 million dedicated to build urban resilience was made by the Foundation (the commitment has now gone up to \$164 million). With this initiative, 100 Resilient Cities supports cities in building a Resilience Strategy aimed at identifying the main risks they are facing and the best way to tackle them. To help cities drive transformation, 100 Resilient Cities has set up different tools from financial to technical support. The initiative encourages cities to hire a Chief Resilience Officer (CRO) who is the single point of contact within a city's government. The CRO's mission is to both deliver the Resilience Strategy of a city by assessing risks and to monitor implementation of the plan. Today, 40 resilience strategies have been set up through 100 Resilient Cities with 90 Chief Resilience Officers in place in cities.



## 1. Interview with Michael Berkowitz

**Resilience in the context of cities is a very broad concept. What does resilience mean for an organization such as The Rockefeller Foundation?**

**Michael Berkowitz:** Resilience is the capacity of a city to thrive in the face of shocks and stresses. Stresses and shocks are different things. Shocks can be earthquakes or terrorist attacks while stresses are more long term like air pollution or high levels of criminality. These shocks and stresses can imperil a city. Urban resilience is about the capacity to survive in the face of these risks.

What allows the city to be more resilient is a broad range of capacities. People often enter the urban resilience lens through public infrastructure. Public infrastructure is part of resilience, but it is broader than that: it is about community cohesion, diversified economy with a strong middle class. It's also about good governance, strong strategic planning and stakeholder engagement. All these very different things help cities strive in the face of crisis.

**In 2013, The Rockefeller Foundation launched 100 Resilient Cities, which you oversee. What is the origin of 100 Resilient Cities, its vision and objectives?**

**M.B.:** 100 Resilient Cities (100RC) was pioneered by The Rockefeller Foundation to mark the Foundation's 100th anniversary. The Foundation looked around the world and saw three major threats when it comes to cities: (1) growing urbanization, (2) globalization, and (3) climate change.

- (1) Over 50% of the population lives in cities today, and by the middle of the century, it will rise to 70–75%. In this context, getting cities right is one of the most critical elements.
- (2) The second element is globalization. What happens in one city impacts other cities around the world. This is true for positive impacts such as technologies and innovation. But it is also true for negative ones: a crisis in one place can disturb supply chains worldwide, diseases spread from one city to another, etc.
- (3) The third trend is climate change. Cities are extremely vulnerable in the face of climate change because they sit on deltas and coastal areas and vulnerable populations are overexposed.

100 Resilient Cities was founded in 2013 as a separate NGO to help cities face all these challenges. At the time the commitment

**“100 RESILIENT CITIES WAS FOUNDED IN 2013 AS A SEPARATE NGO. AT THE TIME THE COMMITMENT FROM THE ROCKEFELLER FOUNDATION WAS TO WORK WITH 100 CITIES AND COMMIT \$100 MILLION TO BUILD URBAN RESILIENCE.”**

from The Rockefeller Foundation was to find 100 cities and commit \$100 million to build urban resilience. The Foundation has since gone beyond that and committed \$164 million. We are trying to change the way cities approach their risks and opportunities. Urban resilience is about being more integrated across sectors: private sector, government, civil society. It is also about integrated planning within the city by making sure for instance that water and utility people talk to the mobility and economic development people. The objective is that people approach cities in a more inclusive way. We are trying to have cities be more forward looking and strategic. It's very hard, because they have so many short-term issues that they need to solve that they often don't have the luxury to think of long-term strategic planning.

**What are 100 Resilient Cities' approach and tools to improve cities' resilience?**

**M.B.:** We selected 100 cities to be an inspiration believing that they will change ultimately the way 10,000 cities operate. The first thing we do is help hire a Chief Resilience Officer (CRO) who is the single point of contact across the city's government to force the city to think more strategically about resilience. Second, we help them build a Resilience Strategy, which is both a top-down and a bottom-up approach to identify where the risk lies and what the city can implement. The third thing is we connect cities to our platform of best-in-class partners that can help cities implement their strategy.

**“WHAT WE’RE HOPING TO DO IS PARTNER WITH CITIES IN THE LONG RUN, BECAUSE THAT IS WHAT WILL CHANGE THE FOOTPRINT OF CITIES AND MAKE THEM SUSTAINABLE AND ULTIMATELY MORE RESILIENT.”**



Buenos Aires

Depending on their needs, cities can tap into this network of partners or the network of CROs, who have already gone about looking at their risk and opportunities in a new way.

Cities don't all have the same needs. Sometimes they need the political courage, and an NGO can help the mayor take a new approach. Sometimes the city needs technical capacity. *How do you integrate green infrastructure in a river revitalisation project?* 100 Resilient Cities has a network of technical experts that can help the city expand its knowledge and progress. In other cases, cities need finance. Usually cities don't need large pools of finance but rather small short-term finance that can help progress a project from one design phase to another. When cities take well-designed projects they almost always find finance either through private sector capital or development finance. But even though there is a lot of capital, the difficulty is advancing the project to a place where it can be financed.

So through our network of partners and member cities, we are able to help cities in those different ways.

We have helped cities build rigorous strategies and we can measure how they've done it and if they have implemented the strategies. We can measure if that has brought more investment to the city and to what extent resilience has been institutionalized. We are partnering with a consultancy to help us build methodologies and we're beginning to make measurements on a project-to-project basis.

Improving measurement will be key for investors and for decision makers to prioritize where to spend resources.

### Do you think awareness of and interest in resilience has grown since you started 100RC?

**M.B.:** Yes, definitely! In our network of partner companies, awareness has grown. I've been really impressed by the change that has happened in four years. At the World Urban Forum in Colombia four years ago, we talked about resilience and people were struggling to understand what it was. We went to the same conference four years later in Malaysia in 2018. This time people were in line with what it was, the conference even dedicated a whole day to it, and the conversation then turned to the how. That felt like a significant shift in four years. We played a role in that but it's also thanks to a larger community of public and private actors.

### 100 Resilient Cities was created five years ago; have you been able to measure some impact?

**M.B.:** This is an area where more research is needed. We want cities to have better outcomes; next time there is flooding or a refugee crisis, we want them to perform better. Progress is hard to measure because such events are large and complex, with low frequency and high impact. What we can measure is the internal process.

### What are the priorities of 100RC for the coming years?

**M.B.:** There are close to 90 CROs in place in cities, 40 strategies have been released, 20 to 25 have started to be implemented. The next thing to do is to make sure that strategies are actually implemented and that doesn't happen over two or three years. That's the work of a generation. What we're hoping to do is partner with cities in the long run to implement those plans, because that is what will change the footprint of cities and make them sustainable and ultimately more resilient.





## 2. Interview with Dr. Arnoldo Matus Kramer

### You have been working as the Chief Resilience Officer (CRO) of Mexico City since 2014. Could you elaborate on the role of CROs within cities?

**Arnoldo Matus Kramer:** The role of a Chief Resilience Officer (CRO) is twofold: (1) delivering the resilience strategy of a city by assessing and prioritizing risks and (2) monitoring and following up on its implementation.

To define the resilience strategy, the first phase is often a stakeholder engagement process to identify the main priorities in terms of risks for the city. Participatory meetings with various city stakeholders are organized. It ranges from government representatives to scientific experts, or private and civil society actors. This process is often long and fairly complex. In Mexico City, because the city is vast and faces multiple issues, it took a year and a half to design the strategy.

At the end of this process, we came up with a concrete strategy, released on September 2016. We have three main priorities today in Mexico City in terms of resilience: seismic risks, water and mobility.

Resilience to seismic risks has become a priority with last year's earthquake. Another earthquake is inevitable in the future and we need to prepare. We want to learn from this experience, to build resilience. Back in 2014, the government of CDMX (Mexico City) created the Fund for Assistance with Natural Disaster (FONADEN) with an initial budget of \$300 million of which 30% is addressing disasters such as earthquakes.

The second priority is water. In Mexico City, one of the main stresses would be overexploitation of the aquifer. In the future, it will become a big risk for the city as we can lose up to 50% of the water available to the city. Mexico City's Resilience Strategy has set up four goals to achieve a resilient water system: reducing water scarcity, promoting sustainable use of the aquifer, fostering a civic culture when it comes to water and integrating green and blue infrastructure.

The last priority is mobility. The ambition is to build sustainable mobility in the city, notably by increasing the number of pedestrians and cyclists and having an efficient and secure massive public transit system. Mexico is becoming a middle-class country and people increasingly buy cars, which translates into increased traffic at the metropolitan level. The CDMX New Mobility Model is based on principles prioritizing the most vulnerable users such as cyclists and pedestrians.

Once the strategy is designed and objectives set up, the challenge is to create the conditions to implement it. In Mexico, after being published, the resilience strategy quickly became institutionalized. We used the opportunity of the creation of a new Constitution to

include resilience in it. The new Constitution adopted in 2017 mentions resilience in three of its major chapters: social inclusion, territorial management and governance.

Implementing a resilience strategy also implies involving different actors, beyond public authorities. For example, in Mexico City, we have built a water fund that is managed by the non-governmental organization called Agua Capital, which has a coalition of private sector participants (such as HSBC, Citibank, Grupo Modelo, etc.) and NGOs (The Nature Conservancy, etc.), and government agencies (Ministry of Environment and the Resilience Agency). The objective is to work on water security to conserve forest areas close to the city that are critical to recharging the aquifer. We have a pilot project of 800 hectares managed with the community to conserve the land and improve agricultural practices to avoid lowering of the aquifer.

In short, the role of a CRO is very dynamic and extremely transversal!

### What kind of support do Chief Resilience Officers receive from The Rockefeller Foundation both in the design and implementation phases of a city's resilience strategy?

**A.M.K:** 100 Resilient Cities provides support to cities in two main ways: financial support and technical assistance.

***“THE ROLE OF A CHIEF RESILIENCE OFFICER (CRO) IS TWOFOLD: DELIVERING THE RESILIENCE STRATEGY OF A CITY BY ASSESSING AND PRIORITIZING RISKS AND MONITORING AND FOLLOWING UP ITS IMPLEMENTATION.”***



Mexico City

The first kind of support a city receives once it joins the 100 Resilient Cities network is financial. Chief Resilience Officers are chosen by the mayor for two years and the municipality receives financial assistance to create this position. Then a transition period starts where the city commits to taking responsibility for the resilience agenda. This means that you need support at the highest level to ensure that resilience is progressively institutionalized. In Mexico City, we are in that transition period. In the case of an unexpected event, The Rockefeller Foundation can also provide additional financial support. Due to the earthquake last year, Mexico City received additional support from the 100RC to support our work this year.

Technical assistance is also provided by the 100RC in two forms: assistance from a platform of partners working on resilience issues and support from other cities in the network.

First, around 100 organizations provide pro bono services to 100RC members. Cities often start a relationship with those organizations offering pro bono services and progressively move to long-term projects. For example, in Mexico City, we started working with the World Bank to create a resilience assessment framework in water-related investments. We also worked with Deltares to

create a water resilience plan to preserve the Xochimilco, which is a UNESCO world cultural and environmental heritage site. We have built long-term relations with those actors. Now, with the earthquake we are reaching out to the actors from this platform to work on other topics related to seismic risks.

Second, there are networks of cities you can request assistance from. For example, a few months ago we organized in Mexico a workshop with nine other cities to work on seismic risks. Cities can also request more specific technical advice from experts in the network. In Mexico City, we're lucky to share offices with the 100RC Latin America and Caribbean Unit as we are building a resilience hub at the city, national and regional levels.

### **In your experience, what are the main challenges faced by a Chief Resilience Officer? In particular, is it possible for CROs to set up a long-term resilience strategy independent of the political agenda?**

**A.M.K:** There are four main challenges for Chief Resilience Officers: maintaining interest from stakeholders, accessing data, financing projects, and indeed guaranteeing the sustainability of the resilience strategy in the long term.

The first challenge is to maintain the interest of different actors. This is a process and methodological challenge. Chief Resilience Officers keep engaging with various stakeholders, so we cannot



do the same workshop every time. CROs need to be creative and innovative in the way they engage with stakeholders so that they keep coming and participating in our work.

The second is a data challenge. Some institutions are still reluctant to share their data. This is a challenge in many cities. In some cases, the data simply does not exist, in other cases researchers or institutions want to keep or protect their data for different reasons. Of course, there is a component of risk when releasing data to the public. Some data should be protected. It is important to create debates on what data is necessary.

The third issue is finding and financing innovative projects. We need to build robust projects and find innovative ways to finance them. In Mexico City, we are currently working with the World Bank and looking at the resilience of portfolios for the water system, so we will be able to prioritize projects according to their level of resilience.

The relationships and potential dependency on political authorities and elected representatives is the fourth challenge. Chief Resilience Officers are appointed by mayors. This means that when government changes, they may need to be assigned again, which is challenging. Still, a resilience strategy is not a government strategy but a long-term city strategy: in the case of Mexico City, the horizon is 2040.

There are many ways to reduce the dependency of the resilience agenda on political forces. First, it is important to have universities, companies and NGOs on board as they won't be subject to change during elections. Creating coalitions, beyond local governments, helps maintain a long-term agenda. The institutionalization of resilience in Mexico City is also a big step forward. After the inclusion of resilience in the Constitution, a separate organization, the Resilience Agency, dedicated to building resilience was created, of which I am the General Director. It has a dedicated budget and a dedicated team of 11 people. The resilience agenda has also been published in the official diary of the government, which makes it official, so it has to be taken into account by the government. Finally, to limit the dependency on current government, we are creating a monitoring and evaluation system for the actions associated with the Resilience Strategy that every actor needs to undertake in the long term for the strategy to be successful.

## When discussing resilience, cities are very often at the forefront. Even so, to what extent do Chief Resilience Officers need to consider geographical areas beyond cities to ensure resilience?

**A.M.K:** There is no resilience for the city if you don't think at the regional level. This is particularly striking for water. The right scale for water is the water basin so you need to think regionally for water resilience. In the case of resilience to climate change, the scale is even wider as it is a global issue. This is why, in Mexico, we want to build not only a city regional strategy but support a national one.

I believe the next steps would be to spread knowledge on resilience to other cities and work with the legislative power to build innovative resilience legislation and finance.

On the first point, we already have tools to share knowledge and build capacities for other cities to think with the resilience lens. For example, in Mexico there is a national risk atlas, a climate change risk atlas that addresses all municipalities in the country. The network of current resilient cities can also help other regions around the world to integrate resilience in their planning and transfer their knowledge to other cities.

On the second point, building legislation in favor of resilience projects at the national level is also very important. In the case of the U.S., there is financial support for resilience challenges for innovative resilience projects, for example. We are already engaging with ministries in Mexico, but we need to go further. This is an opportunity for the coming years.

**“THERE ARE FOUR MAIN CHALLENGES FOR CHIEF RESILIENCE OFFICERS: MAINTAINING INTEREST FROM STAKEHOLDERS, ACCESSING DATA, FINANCING PROJECTS, AND GUARANTEEING THE SUSTAINABILITY OF THE RESILIENCE STRATEGY IN THE LONG TERM.”**